

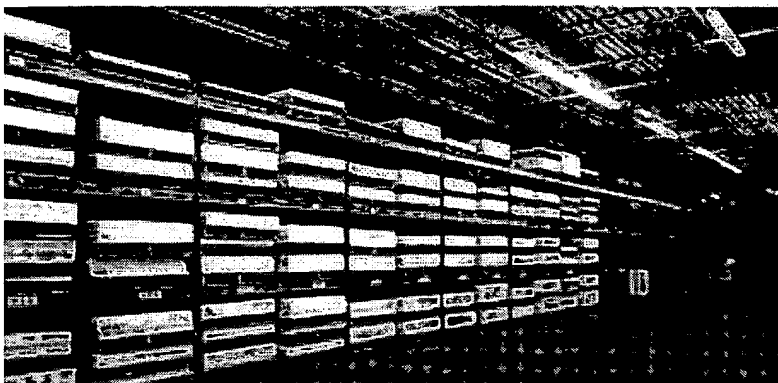
EXHIBIT "B"

SERIAL NO.: 10/041,111

DOCKET: TUC920000094US1

SAN DIEGO PLASTICS, INC.

POLYETHYLENE



Polyethylene is used more than any other thermoplastic polymer. There is a wide variety of grades and formulations available that have an equally wide range of properties. In general, the outstanding characteristics of polyethylene are:

**Toughness
Ease of processing
Chemical resistance
Abrasion resistance
Electrical properties
Impact resistance
Low coefficient of friction
Near-zero moisture absorption**

The three most commonly used grades of polyolefin are: Low Density, High Density and Polypropylene.

LOW DENSITY POLYETHYLENE (LDPE)

LDPE, was the first of the polyethylenes to be developed. It is a corrosion resistant, low density extruded material that provides low moisture permeability. LDPE has a fairly low working temperature, soft surface and low tensile strength. It is an excellent material where corrosion resistance is an important factor, but stiffness, high temperature and structural strength are not important considerations.

**Features
Lightweight
Formable
Impact Resistant
Excellent Electrical Properties
Machinable
Weldable**

**Fabrication
LDPE can be fabricated using the following techniques.**

**Hot gas welded
Fusion and butt welded
Ultra-sonic sealed
Die cut
Machined with wood or metal working tools
Vacuum formed
Thermo-formed**

**Applications
Chemical resistant tank and containers
Food storage containers
Laboratory equipment
Disposable Thermo-formed products
Corrosion resistant work surfaces
Vacuum formed end caps and tops
Moisture barrier**



HIGH DENSITY POLYETHYLENE (HDPE)

HDPE is more rigid and harder than lower density materials. It also has a higher tensile strength, four times that of low density polyethylene, and it is three times better in compressive strength. HDPE meets FDA requirements for direct food contact applications. It also is accepted by USDA, NSF and the Canadian Department of Agriculture.

Features

Abrasion Resistant

The extremely high molecular weight of HDPE combined with its very low coefficient of friction provides an excellent abrasion resistant product preventing gouging, scuffing and scraping.

Exceptional Impact Strength

HDPE is one of the highest impact resistant thermoplastics available and maintains excellent machinability and self-lubricating characteristics. Properties are maintained even at extremely low temperatures.

Chemical Resistant

HDPE has very good chemical resistance of corrosives as well as stress cracking resistance (with the exception of strong oxidizing acids at elevated temperatures). Certain hydrocarbons cause only a light surface swelling at moderate temperature.

Water Resistant

Moisture and water (including saltwater) have no affect on HDPE. It can be used in fresh and salt water immersion applications.

Fabrication

HDPE can be fabricated using the following techniques:

Hot gas welded
Fusion and butt welded
Ultra-sonic sealed
Die cut
Machined with wood or metal working tools
Vacuum formed
Thermo-formed

HIGH DENSITY POLYETHYLENE (HPDE) APPLICATIONS

- Food cutting boards
- Corrosion resistant wall coverings
 - Pipe flanges
 - Lavatory partitions
- Man-hole covers in Chemical Plants
 - Radiation shielding
- Self supporting containers
- Prosthetic devices

Typical properties of polyethylene

ASTM test	Property	Low density	Medium density	High density	Ultrahigh molecular weight
PHYSICAL					
D792	Specific gravity	0.910-0.925	0.926-0.940	0.941-0.965	0.928-0.941
D792	Specific volume (in. ³ /lb.)	30.4-29.9	29.9-29.4	29.4-28.7	29.4
D570	Water absorption, 24 hours, 1/8 inch thick (%)	<0.01	<0.01	<0.01	<0.01
MECHANICAL					
D638	Tensile strength (psi)	600-2,300	1,200-3,500	3,100-5,500	4,000-6,000
D638	Elongation (%)	90-800	50-600	20-1,000	200-500
D638	Tensile modulus (10~5 psi)	0.14-0.38	0.25-0.55	0.6-1.8	0.20-1.10
D790	Flexural modulus (10~5 psi)	0.08-0.60	0.60-1.15	1.0-2.0	1.0-1.7
D256	Impact strength, izod (ft-lb/in. of notch)	No break	0.5-16	0.5-20	No break
D785	Hardness, Rockwell R	10	15	65	67
THERMAL					
C177	Thermal conductivity (10~4 cal-cm/sec-cm~2-°C)	8.0	8.0-10.0	11.0-12.4	11.0
D696	Coefficient of thermal expansion (10~5 in./in.-°F)	5.6-12.2	7.8-8.9	6.1-7.2	7.8
D648	Deflection temperature (°F) At 264 psi	90-105	105-120	110-130	118

	At 66 psi	100-121	120-165	140-190	170
ELECTRICAL					
D149	Dielectric strength (V/mil) short time, 1/8-in. thick	460-700	460-650	450-500	900 kV/cm
D150	Dielectric constant At 1kHz	2.25-2.35	2.25-2.35	2.30-2.35	2.30-2.35
D150	Dissipation factor At 1kHz	0.0002	0.0002	0.0003	0.0002
D257	Volume resistivity (ohm-cm) At 73°F, 50% RH	10~15	10~15	10~15	10~18
D495	Arc resistance(s)	135-160	200-235	-	-
OPTICAL					
D542	Refractive index	1.51	1.52	1.54	-
D1003	Transmittance (%)	4-50	4-50	10-50	-



[Return
To MAIN](#)



[Site
Map](#)



[Search
Me](#)



[Sales
Terms](#)



[Contact
Us](#)



[Return to
Linecard](#)